The Juvenile Instructor

VOL. 5. SALT LAKE CITY, SATURDAY, FEBRUARY 5, 1870. NO. 3.

[For the *Juvenile Instructor.*

THE RIVER GANGES.

THE engraving we present to our readers to-day, represents a Hindoo woman in the act of consigning her babe to a watery grave.

The Hindoos occupy a portion of India, and are a very superstitious and benighted people. In number 26, Vol. 4, we gave you an account of the Fakirs, a certain class of Hindoos, and also a short sketch of the ceremony, or sacrifice practiced among the Hindoos, and called the Suttee. The Suttee is the voluntary submission of a woman to be burned alive, with the dead body of her husband, hoping thereby, according to her tradition, to have the privilege of following his departing spirit.

These people are idolatrous; in other words, they worship images, animals of various kinds, and often a myth—a something, they know not what—which exists merely in their imagination. Their ideas of religion are very vague and extremely absurd.

Some years ago it was customary for thousands of people to visit this river annually to worship and bathe in the sacred waters. Numerous victims of both sexes, in their excess of zeal and ignorance, were wont to cast themselves from the cliffs above into its waters to drown, and be devoured by the alligators abounding there; supposing thereby to expiate their sins, and appease the wrath of their god. Women too, were in the habit of throwing their children into the river for a like purpose.

Our engraving, although it illustrates the subject, and serves to show our young readers the ignorance, sin and degradation of this people, is not a correct one, in that it represents the woman as being alone. They were in the habit of going in immense crowds, and not singly. For instance, that class or caste of Hindoos called Brahmins have a tradition concerning the creation which leads them to believe that it commenced by a seed being planted in the waters, which afterwards became an egg, and from which Brahma, the creator, burst forth or was born. Another tradition they have, equally absurd, is that India, the country in which they dwell, is a planet of itself, separate and apart from the rest of the world. According to their belief every river, fountain or stream is a diety itself, or has a divinity presiding over it, and their superstition is so strong as to

lead them to make long pilgrimages to worship or do homage to these different gods. One of the most celebrated of these is the river Ganges, the one, we presume, that is represented in our engraving.

[For the *Juvenile Instructor.*

Chemistry of Common Things.

SODIUM.—NATRIUM.

THERE is great similarity between this element and Potassium; so much so that many suppose they are of common origin. When the metal sodium (Na.) is placed upon water it does not behave precisely like potassium; as an experiment it is not so brilliant, but the results are almost the same. Both produce a like alkaline body, which produce by their combinations similar salts. Look at the formula and compare it with K.O.H. (potassa) Na. O.H. is soda. The metal sodium separates oxygen from water forming an oxide (protoxide) retaining an atom of hydrogen, forming a hydrate, setting one atom of hydrogen free. Again, both these alkaline bodies have like affinities, for C. 2 O. carbonic acid, forming carbonates. K.O., C2.O. is a carbonate of potash Na.O., C2.O. is a carbonate of soda. And there is a like affinity for other bodies. But there is a difference in the history of these bodies: potash is of vegetable, soda of animal origin; both, however, have relation to organic existence. Soda is obtained from the ashes of sea-weed, potash from land plants. Potash is necessary to the juices (sap) of vegetables, soda is indispensible to the existence of animals—human blood, for instance, could not be blood unless salt was in it. Salt is this very element sodium, in union with the element chlorine, Na. Cl. There are also potash, as well as soda salts in the blood. We have vast supplies of excellent salt in the Lake close by, and there are immense depositories of this necessary substance in some of our rocks. If any one is curious to see a specimen of the pure "rock salt," they may see a fine piece, clear as crystal, at our excellent museum.

Soda is of great value also, in the arts; combined with fatty acids, it forms hard soaps. If the student will read the article "soap," he will see its mode of combination. There is one process alluded to there which may be better understood now that the "law of substitution" has been explained, viz., the conversion of soft soaps (potash soaps), into hard soaps (soda soaps). When a caustic solution of potash K.O.H. receives fatty matter, decomposition takes place. The stearic acid; or, if oil is used, the oleic acid is separated from the glycerine, and united to the potash, forming a stearate or oleate of potash. This soap remains soft, the glycerine being mechanically mixed with it. To convert this into a hard soap (soda soap), if a handful of salt (Na. Cl.) is added, a double decomposition takes place by substitution. The sodium of the common salt leaves the chlorine and takes up the fatty acid, and the potash takes up the chlorine, forming a chloride of potassium. It will be noticed in this experiment that the soap forms a curd, and an underlye is separated. This contains the chloride of potash and the glycerine, *mixed*, not combined. Now this is of great importance in the arts, for lye can be prepared from wood ashes and made caustic by quicklime; and, to obtain the more valuable hard soap, salt, of which we have abundance, can be used. And, as many may suppose, some definite quantity of salt is to be added, it will be well to explain the mode of action. However much salt is used *chemical combinations can only take place in definite proportions*, the surplus salt, if any, will be found in the underlye. Still *too much* has a tendency to make the curd soap friable; practice will soon make perfect in this useful art. The reason why the soap separates from the underlye is: soap is insoluble in salt water.

Then we find that this metal sodium in combination finds its way into the blood by our food; soda salts are found in nearly every article prepared for our use. The carbonate of soda and tartaric acid form our "baking powders." Soda is added to our cakes to make them "light." Sometimes this is overdone. When fatty matter is used, a little soda may combine with it advantageously. But, when free soda is taken into the stomach, mischief may be done The digestion of food is effected by *acid* juices; alkalies neutralize acids. This is why indigestion occurs sometimes, when pastry in which soda is too freely used is eaten. Salt is put in bread, in this way we receive this necessary substance. And, we take it into the system with impunity, it is on every table as a condiment. Suppose now, as philosophers, we try to find out some of the uses of salt in the blood. Salt increases the specific gravity of fluids, a pint of salt water is heavier than a pint of fresh. Blood is a saline fluid; water would permeate through the delicate coats of the containing vessels, the veins and arteries; blood will not, it is too viscid. This quality is owing to the presence of salt. Salt also acts as a separator, just as it produces an exchange of elements in soap making. When chlorine is wanted in the gastric juices to dissolve the food, salt helps to supply it. And it helps to carry off effete and worn-out matter by the secretions.

This element is very abundant, the sea, the air, the waters, and the rocks contain it. It is of the highest importance to man in its uses, apart from its use as food. A large number of compounds are prepared from the common carbonate for bleaching, soap-making, glass-making, for sulphate of soda, and the bi-carbonate of soda for bread-making. In its combinations it will again be brought prominently forward, as it plays a part in a large number of changes in experimental chemistry. Besides the elements kalium and natrium, there are four others, which form *alkalies*, they may be noticed as such, and the nature of those bodies explained.

BETH.

ALL of us, however small or obscure we may be, possess more or less influence. And we are at liberty to use our influence for good or evil. The boy, who always takes a bold stand for the right, and sets a good example for others, is using his influence for good, and will, if he lives to become a man, see the good results of his course in himself and others; which to him will be an ample reward, while the boy who has not sufficient moral courage or stamina to take a course of this kind, but chooses to take the opposite and listen to the temptings of evil disposed persons, exerts his influence for evil; and will in after years experience the results, in sorrow to himself and others. God requires us not only to do right ourselves, but to influence others to do right.

MASTER Charlie, aged 4 years, was not pleased on being reproved by his mother for some mischievous prank, and showed his displeasure in his face, when his mother remarked: "Why, Charlie, I am astonished to see you making faces at your mother!" Charlie brightened up at once and replied: "Why, I calculated to laugh, but, mamma, my face slipped."

[For the *Juvenile Instructor.*

MISSIONARY SKETCHES.

THE *Imaum of Museat*, was bound for the East Indies; but was to touch at the Sandwich Islands. We were glad that we had to go no farther, so it was with positive delight that we learned, after being nearly four weeks on board, that we would soon be at the end of our voyage. The sight of land is most welcome to those who have been weeks at sea, especially if they suffered from sea-sickness. To our eyes, therefore, the rough, mountainous isles of the Hawaiian group were very beautiful. We longed to tread upon them.

For myself I was scarcely intended for a sailor. I am very easily made sick by the motion of a vessel on the water, and no amount of going to sea prevents this. Some years since, while crossing the Atlantic, I lay sea-sick in my berth, and, to divert my mind, I tried to recall the number of different times I had been in that condition. I counted upwards of fifty distinct occasions that I had suffered from this sensation, and I have been sea-sick a number of times since.

During the night we passed the island of Hawaii, the largest of the group, and the one on which Captain Cook, the first white man whom we know who discovered these islands, was killed. The next morning the island of Maui was seen in the distance. Then Molokai and Lanai; and the morning following, when we arose, we were sailing alongside of Oahu, the island on which the town of Honolulu, the capital of the kingdom is situate.

The town of Honolulu is built on an extensive flat of great fertility. The town is pretty, and wears a tropical look; but, since the time of which I write, its buildings and surroundings have been greatly improved. Groves of cocoa-nut trees, with their long feathery leaves, and tall graceful trunks, were growing here and there in the vicinity of the town, and trees of other kinds were also abundant in and around it. Behind Honolulu stretches what is called the Nuuanu valley, a beautiful country, which, even when we first visited it, was selected as a proper locality for the villas and country residences and gardens of the officers of the government, the missionaries and merchants. On the right of the harbor of Honolulu is "Punch Bowl Hill," a large hill where once a volcano burned, but which is now extinct. The name is very suitable, for the volcano has left it more like a Punch-Bowl than anything else. While yet some miles from the mouth of the harbor we met several canoes; containing natives of the islands, who were out fishing. These canoes were merely logs hollowed out; but they were easily managed, and, with the aid of sails, their progress through the water was very rapid. To prevent their turning over, they had outriggers fastened to their sides.

A coral reef, over which the sea breaks with a tremendous roar, even in calm weather, extends nearly around the harbor of Honolulu. The entrance is very narrow, and seemed difficult of access, and as we entered, guided by a skillful pilot, a man was kept busy throwing the lead to learn the depth of water. On the reef were the wrecks of several vessels. The water was beautifully clear, and it was easy to distinguish the bottom as we sailed along. No sooner was the anchor dropped than the decks were crowded with natives; some trying to sell bananas, oranges, cocoa nuts, melons and other fruits (this was in the month of December;) and others anxious to take us ashore. The monotonous character of their language, their rapid utterance, their numerous gestures, caused us to watch them with interest. We thought them a strange people. I little thought at that time that I would ever learn their language, or become as familiar with their customs as I afterwards did; for though we had been sent on missions to the Islands, we supposed our time would be occupied in preaching to the whites.

[For the *Juvenile Instructor.*

Original Poetry.

TO THE SUNBEAM.

For your present example—
Your future one, too,
"*To the Sunbeam,*" was written
Expressly for you.

Reflect on the sunbeam,
And each aim to be
A sunbeam of virtue,
And nobility.

Be ever like sunbeams,
To make all hearts glad—
To warm the cold bosom,
And cheer up the sad.

Like the sunbeam, be sportive
In innocent glee;
And try to be happy
Wherever you be.

As sunbeams of beauty,
Let God's spirit shine
In your hearts and your faces,
With beauty divine.

Be upright and honest,
In work and in play;
Do good to each other
Whenever you may.

Be firm to your purpose,
In what you pursue;
Be sunbeams of honor
And excellence too.

As sons and as daughters
Of Zion, prepare,
In the work of redemption,
To do a great share.

As sunbeams, be useful,
And goodness distil;
That high posts of honor
And trust, you may fill.

Be sunbeams of truth, and
Be sunbeams of love;
And exhibit the wisdom
That comes from above.

E. R. S.

To be thoughtful for others, on the way of life, is one of the most essential elements in good manners; and, like all accomplishments, this can be learned.

It is much easier to think right without doing right, than to do right without thinking right. Just thoughts may, and often do, fail of producing just deeds, but just deeds are sure to beget just thoughts.

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GEORGE Q. CANNON - - EDITOR.

SATURDAY, FEBRUARY 5, 1870.

EDITORIAL THOUGHTS.

THE Theatre in this city can be made one of the finest ball-rooms in the country, there not being many as fine in any of the large cities of the East. There is a floor all fastened together in sections, which is prepared, so that when it is desired to make it a ball-room, it can be laid down over the parquette; and this with the stage gives room enough for twenty-five sets for cotillion dance, or one hundred couple. There have been some very grand parties held there this winter, where the grown-up people enjoyed themselves very much; but the most pleasing and interesting parties we have seen have been those which the managers got up for the juveniles. What innocent joy and pleasure the little folks did manifest at those parties! They danced and frolicked to their hearts' content. The dancing commenced in the afternoon, and afterwards there was an intermission to allow the juveniles either to go home to supper, or, if they had brought it with them, to eat it there. Then dancing was resumed, and kept up till about 10 o'clock, when the parties were closed. Numbers of persons paid to get into the gallery of the Theatre to witness the dancing, and to enjoy the sight of the children and their happiness. It is not often such a scene is witnessed, and in looking upon it we thought that the angels would view it with pleasure. We neither saw nor heard of any quarreling or unpleasantness of any kind; but all was peace and harmony and innocent glee. Visitors who entered the Theatre on those occasions must have been struck with the number of children present, their healthy appearance and their vivacity. This is a great country for children.

WRITING about the number of children there are in this country, brings to mind the reports which we hear from our Elders who are now on missions in the East. In traveling around they are struck with the fewness of the children in that country. Quite a contrast in this respect with Utah. It is but seldom, they say, in families which think themselves fashionable, that they have more than two children, and in many cases they have none! Many people think it very vulgar to have a large number of children. People who are low and poor may have the trouble of caring for them and bringing them up; but, in many persons' opinions, it is altogether improper for respectable families to have a brood of children. Instead of looking upon them as a blessing, they view them as a burden! How different is this feeling to that which men and women have in this Territory! Here they think their children a precious gift from the Lord, and every child they have given unto them is received with gladness. And how much it adds to the happiness of children to have brothers and sisters for companions. The writer can recollect how delighted he was when his first brother was born; he was very young at the time; but the birth of a brother added very much to his happiness; so with the brothers and sisters born afterwards. Children, so far as we know, are always overjoyed when a baby brother or sister is born, and it is right they should be. The feeling is from the Lord; and the people who look upon children as a burden, or who think it vulgar to have them, get such thoughts from the evil one.

WE have often told our readers that they ought to be careful about the kind of books they read. Better to not read at all than to read improper books; but children need not go without reading, for good books can be got in any number. We lately read of the evil which the reading of bad books produces. It was in England. Books which give a short history of noted thieves, are sold there very cheap. They describe those rascals as great heroes, and an ignorant boy in reading them might think that to be a robber would be quite a fine life to lead. A gang of boys, between the ages of fourteen and eighteen, had read these books, and they thought they would turn robbers and have a "robbers' cave." So they picked out an old railroad arch, and commenced the business of stealing. They stole chickens and other things, and carried them there and cooked them. One day a servant girl found one of them in her master's garden, and he drew a pistol, like some of the robbers he had been reading about, and pointed it at her. He was caught, and this led to the finding of the others. They were taken before the judge, who sent them to prison, where they had to work at hard labor for one month. This broke up the gang.

Here is a direct instance of the effect of bad reading upon young people. These boys became thieves, were disgraced, sent to prison to work at hard labor, and when their time in prison will be ended they will come out disgraced. Probably sending them to prison will not check them; they may come out and be as bad or worse than ever. And all this from reading improper books! Children, do not read them. Do not read novels, and fancy tales; they will injure you.

ONLY A BOY.

Only a boy, with his noise and fun,
The veriest mystery under the sun,
As brimful of mischief, and twitch and glee,
As ever a human frame can be;
And as hard to manage as—what? ah, me!
'Tis hard to tell,
Yet we love him well.

Only a boy, with his fearless tread,
Who cannot be driven, but must be led;
Who troubles the neighbors' dogs and cats,
And tears more clothes and spoils more hats,
Loses more tops, and kites and bats,
Than would stock a store
For a year or more.

Only a boy, with his wild, strange ways,
With his idle hours or his busy days;
With his queer remarks, and odd replies,
Sometimes foolish, and sometimes wise,
Often brilliant for one of his size,
As a meteor hurled
From the planet world.

Only a boy, who will be a man,
If Nature goes on with her first great plan—
If water, or fire, or some fatal snare,
Conspire not to rob us of this our heir,
Our blessing, our trouble, our rest, our care,
Our torment, our joy!

"Only a boy."

[For the *Juvenile Instructor.*

AN EASTERN FOUNTAIN.

NONE of us can read far in the Old or New Testament without noticing the importance of water to the Israelites in Palestine; and, indeed, in every country in which they or their forefathers journeyed or dwelt; but more particularly in the deserts in which they wandered when they left Egypt under the guidance of Moses. We who dwell in Utah can readily realize the value of water to ancient Israel, without a multitude of reasons being given; most of us understand it too well from the experience of our own lives.

To dig a well in almost rainless Palestine, Arabia, and other oriental lands was, in ancient times considered a labor of sufficient importance to give the person who performed the work a right to the land that was brought into cultivation thereby. Indeed, to-day, in those climes, to dig a well at a spot remote from a supply of water, is the most difficult task which the chief of a tribe undertakes; and the benefit of such a work is so highly esteemed, that "the property in the well becomes vested in him and in his heirs forever." While his tribe is encamped near the well, no person, not belonging to it, can draw water therefrom without leave. However, if the well gets out of repair, or is choked up, and so remains for any length of time, the property in it lapses to the tribe or person who restores it to a serviceable condition. This is the law of the desert in our times.

It is probable that the existence of such a law as this in the days of the Patriarchs caused the trouble that arose between the servants of Abraham and Isaac and those of Abimelech, as to the right of the former to dig wells, and use the water within the territory of the Philistines. These latter, no doubt, dreaded to have the warlike followers of Abraham and his son for near neighbors.

It was the custom in older times, and it is the same to-day, for the young maidens of the cities of Palestine and the neighboring countries to go in parties, to draw water from the wells, at stated hours of the day. The well or fountain of a city thus becomes the rendezvous, where the news of the day is talked over, and the chit-chat and gossip of the population is circulated. It was, no doubt, on an occasion such as this that Rebekah met the servant of Abraham, when he went to seek a wife for Isaac, and to such a custom he referred in his prayer to the Lord:

"Behold, I stand here by the well of water; and the daughters of the men of the city come out to draw water: and let it come to pass, that the damsel to whom I shall say let down thy pitcher, I pray thee, that I may drink; and she shall say, drink, and I will give thy camels drink also: let the same be she that thou hast appointed for thy servant Isaac; and thereby shall I know that thou hast shewed kindness unto my master."

It must be remembered that it would be a very unlikely thing for any one of the maidens of the city to make such an answer did not the Lord direct her, as it was a work of no small labor to draw water for a man and his ten camels, these animals being by no means small drinkers.

Such a fountain as is seen in our engraving, may be found near Nazareth and many other cities of the Holy Land. In fact the scene here represented has its counterpart in almost every eastern city. Here also we see the form of water bottles, that have been used in those lands from the days of Shem until now; the peculiar style of dress, the veiled woman, the ever present camel and the general *et cætera's* that go to make up an oriental scene, altogether giving us an excellent idea of life in the far east.

G. R.

[For the *Juvenile Instructor.*

Biography.

JOSEPH SMITH, THE PROPHET.

WE can imagine how Joseph would have enjoyed himself had he ever reached these mountains. How he would have rejoiced in the freedom he would have had here! From his youth he was a persecuted and hunted man; he scarcely ever saw a day's peace. Mobs and wicked men were continually forming plans to destroy him. But could he have reached here, he would have enjoyed liberty without being molested. He knew this, and it was his desire to come here, and to have the people established here; for he knew and predicted that the Saints would become a mighty people in the Rocky Mountains. But all his plans and hopes were overturned by the persuasions and remonstrances of cowardly, sellish persons, who ought to have been his friends, and who, instead of entreating him to go back, should have helped him to carry out that which God revealed to him. When men whom God has chosen to act in authority are led to give certain counsel, or to take a certain course, the person who seeks to change that counsel, or to divert them from that course, incurs a fearful responsibility. Yet it is frequently done. There are many people who are not willing to have the man who has the authority dictate what shall be done; they can not trust him; they have some better plan to suggest. In this way counsel is darkened, the spirit of God is grieved and trouble follows. We have noticed, from the days of which we write until the present, that whenever men were reluctant to adopt the plans and counsel of those in authority, and urged their own in the stead, that God's blessing did not rest upon them. When a man has the right to counsel and to decide what shall be done, and his mind is clear on the point, there should be no division on the subject, and men who do not have the authority should never presume to suggest other plans, as superior to that of the man who presides.

The instructions of Joseph's wife, Emma, to the men whom she requested to cross the river and intreat him to return to Nauvoo were well carried out. She had sent the same message by Bro. O. P. Rockwell; but he knew

his duty too well to attempt to use any influence of that kind with Joseph. Not so with the others, they felt as Emma did about Joseph's return, and were earnest advocates of her suggestion. When it was decided to return, Joseph and Hyrum wrote a letter to Governor Ford. In this Joseph stated that his only objection to a trial at Carthage was on account of assassins and the fear of deathly consequences from their hands. But now he and Hyrum offered to go out to Carthage as early as it would be convenient for him to send a *posse* to escort them to head-quarters; provided they could have a fair trial, not be abused, and have all things done in due form of law and without partiality. They told him when and where they would meet the *posse*, if the letter should be satisfactory. He also wrote other letters, one to an attorney and one to a witness whom he wished to meet at Carthage.

He then, accompanied by Hyrum, Dr. Richards, O. P. Rockwell, and others, started back with the intention of crossing the river to Nauvoo. As they walked towards the river he fell behind with O. P. Rockwell. The others shouted to him to come on. Joseph replied:

"It is of no use to hurry, for we are going back to be slaughtered."

This thought was evidently uppermost in his mind. He continually expressed the wish to get the people together that night to talk to them once more. O. Porter Rockwell said, if that was his wish he would collect the people, and he could talk to them by starlight. But when they arrived at his mansion, and his family surrounded him, he tarried there all night and gave up the idea of preaching to the saints by starlight.

Colonel Theodore Turley and Elder Jedediah M. Grant were the bearers of his letter to Governor Ford, at Carthage. Upon reading it the Governor agreed to send a *posse* to escort Joseph in safety to Carthage. But, immediately afterwards, a lawyer by the name of Skinner came in and made a very bitter speech to the Governor about Joseph; he was joined in this by Wilson Law, the apostate, and Joseph H. Jackson, a man who had been guilty of almost every crime. They told him naught but lies. This conduct caused Elder Grant to ask if messengers to him were to be insulted in that manner. The poor, pitiful creature of a Governor was so easily influenced by what these enemies said to him, that he treated the brethren coldly, and took back the promise he had made about sending an escort to accompany Joseph. It was an honor, he said, not given to any other citizen. Neither would he suffer the brethren to stay in Carthage through the night; but ordered them to start for Nauvoo at 10 o'clock, and carry orders to Joseph to be at Carthage by 10 o'clock the next morning without an escort. He threatened that if Joseph did not give himself up at that time, Nauvoo would be destroyed, and all the men, women and children that were in it. The horses of the brethren were so tired that they did not reach Nauvoo until 4 o'clock on the morning of the 24th. They reported to Joseph the excitement which prevailed in Carthage; but he had promised to go there, and he was determined to go and give himself up to the Governor. No warning of the trouble likely to occur at Carthage had any effect upon him then; he had made up his mind.

On the morning of the 24th, Joseph, accompanied by the eighteen brethren, whom Francis M. Higbee, under oath, had accused of a riot in destroying the *Nauvoo Expositor* press, and several other brethren, started for Carthage. When they got to the Temple, Joseph paused and looked with admiration upon that building, and then upon the city, and remarked:

"This is the loveliest place and the best people under the heavens; little do they know the trials that await them."

As he passed out of the city, he called on Bro. Daniel H. Wells, who was unwell, and who was not at that time in the church; and on parting he said:

"Squire Wells, I wish you to cherish my memory, and not think me the worst man in the world either."

Four miles from Carthage they met a company of about sixty mounted militia, under the command of a Captain Dunn. On seeing them Joseph said to the brethren:

"Do not be alarmed, brethren, for they cannot do more to you than the enemies of the truth did to the ancient Saints—they can only kill the body."

(*To be continued.*)

THE POTTER'S ART.

THE potter's art, one of the oldest in the world, after having been carried to a high pitch of excellence by the ancients, fell into decay during the middle ages, and the knowledge of many of the most important processes died out. Vases and other articles of earthernware, painted or enameled, remained as relics of the past, but the secret of their manufacture had passed away with those who made them, and had to be rediscovered by the moderns.

Among the first of those who applied themselves to the revival of the art in Europe was Luca della Robbia, a sculptor of some eminence at Florence. He had been bred to the trade of goldsmith, but abandoned it to become a sculptor. A man of a singularly enthusiastic and earnest nature, he applied himself arduously to his profession. He worked all day with his chisel, and sat up, even through the night, to study. "Often," says Vasari, "when his feet were frozen with cold in the night time, he kept them in a basket of shavings to warm them, that he might not be compelled to discontinue his drawings." Such devotion could hardly fail to secure success. Luca was recognized as one of the first sculptors of the day, and executed a number of great works in bronze and marble. On the conclusion of some important commissions, he was struck with the disproportion between the payment he received and the time and labor he had expended; and, abandoning marble and bronze, resolved to work in clay. Before he could do that, however, it was necessary to discover some means of rendering durable the works which he executed in that material. Applying himself to the task with characteristic zeal and perseverance, he at length succeeded in discovering a mode of protecting such productions from the injuries of time, by means of a glaze or enamel, which conferred not only an almost eternal durability, but additional beauty on his works in terra cotta. At first this enamel was of a pure white, but he afterwards added the further invention of coloring it. The fame of these productions spread over Europe, and Luca found abundant and profitable employment during the rest of his days, the work being carried on, after his death, by brothers and descendants.

The next great master in the art was Bernard Palissy,—a man distinguished not only for his artistic genius, but for his philosophical attainments, his noble, manly character, and zealous piety. Born of poor parents about the beginning of the sixteenth century, Bernard Palissy was taken as apprentice by a land-surveyor, who had been much struck with the boy's quickness and ingenuity. Land-surveying, of course, involved some knowledge of drawing; and thus a taste for painting was developed.

From drawing lines and diagrams he went on to copy from the great masters. As this new talent became known he obtained employment in painting designs on glass. He received commissions in various parts of the country, and in his travels employed his mind in the study of natural objects. He examined the character of the soils and minerals upon his route, and the better to grapple with the subject, devoted his attention to chemistry. At length he settled and married at Staines, and for a time lived thriftily as a painter.

One day he was shown an elegant cup of Italian manufacture, beautifully enameled. The art of enameling was then entirely unknown in France, and Palissy was at once seized with the idea, that if he could but discover the secret it would enable him to place his wife and family in greater comfort. "So, therefore," he writes, "regardless of the fact that I had no knowledge of clays, I began to seek for these enamels as a man gropes in the dark. I reflected that God had gifted me with some knowledge of drawing, and I took courage in my heart, and besought him to give me wisdom and skill."

He lost no time in commencing his experiments. He bought a quantity of earthen pots, broke them into fragments, and covering them with various chemical compounds, baked them in a little furnace of his own construction, in the hope of discovering the white enamel, which he had been told was the key to all the rest. Again and again he varied the ingredients of the compositions, the proportions in which they were mixed, the quality of the clay on which they were spread, the heat of the furnace to which they were subjected; but the white enamel was still as great a mystery as ever. Instead of discouraging, each new defeat seemed to confirm his hope of ultimate success and to increase his perseverance. Painting and surveying he no longer practised, except when sheer necessity compelled him to resort to them to provide bread for his family. The discovery of the enamel had become the great mission of his life, and to that all other occupations must be sacrificed. "Thus having blundered several times at great expense and through much trouble, with sorrows and sighs, I was every day pounding and grinding new materials and constructing new furnaces, which cost much money, and consumed my wood and my time." Two years had passed now in fruitless effort. Food was becoming scarce in the little household, his wife worn and shrewish, the children thin and sickly. But then came the thought to cheer him—when the enamel was found his fortune would be made, there would then be an end to all his privations, anxieties, and domestic unhappiness, Lisette would live at ease, and his children lack no comfort. No, the work must not be given up yet. His own furnace was clumsy and imperfect,—perhaps his compositions would turn out better in a regular kiln. So more pots were bought and broken into fragments, which, covered with chemical preparations, were fired at a pottery in the neighborhood. Batch after batch was prepared and despatched to the kiln, but all proved disheartening failures. Still with "great cost, loss of time, confusion, and sorrow," he persevered, the wife growing more shrewish, the children more pinched and haggard. By good luck at this time came the royal commissioners to establish the gabelle or tax in the district of Saintonge, and Palissy was employed to survey the salt marshes. It was a very profitable job, and Palissy's affairs began to look more flourishing. But the work was no sooner concluded, than the "will o' the wisp," as his wife and neighbors held it, was dancing again before his eyes, and he was back, with redoubled energy, to his favorite occupation, "diving into the secret of enamels."

Two years of unremitting, anxious toil, of grinding and mixing, of innumerable visits to the kiln, sanguine of success, with ever new preparations; of invariable journeys home again, sad and weary, for the moment utterly discouraged; of domestic bickerings; of mockery and censure among neighbors, and still the enamel was a mystery—still Palissy, seemingly as far from the end as ever, was eager to prosecute the search. He appeared to have an inward conviction that he would succeed; but meanwhile the remonstrances of his wife, the pale, thin faces of his bairns, warned him he must desist, and resume the employments that at least brought food and clothing. There should be one more trial on a grand scale,—if that failed, then there should be an end of his experiments. "God willed," he says, "that when I had begun to lose my courage, and was gone for the last time to a glass-furnace, having a man with me carrying more than three hundred pieces, there was one among those pieces which was melted within four hours after it had been placed in the furnace, which trial turned out white and polished, in a way that caused me such joy as made me think I was become a new creature." He rushed home and burst into his wife's chamber, shouting, "I have found it!"

"WATCH, MOTHER."

Mother, watch the little feet,
Climbing o'er the garden wall,
Bounding through the busy street,
Ranging cellar, shed and hall.
Never count the moments lost,
Never count the time it costs;
Guide them, mother, while you may,
In the safe and narrow way.

Mother, watch the little hand,
Picking berries by the way;
Making houses in the sand,
Tossing up the fragrant hay.
Never dare the question ask—
"Why to me the weary task?"
The same litt'e hands may prove
Messengers of light and love.

Mother, watch the little tongue,
(Prattling, eloquent and wild),
What is said and what is sung
By the joyous, happy child.
Catch the word while yet unspoken,
Stop the vow before 'tis broken;
This same tongue may yet proclaim
Blessings in a Savior's name.

Mother, watch the little heart,
Beating soft and warm for you;
Wholesome lessons now impart;
Keep, O keep that young heart true.
Extricating every weed,
Sowing good and precious seed:
Harvest rich you then may see,
Ripen for eternity.

A BLUFF old farmer says: "If a man professes to serve the Lord, I like to see him do it when he measures onions, as well as when he hollers glory, halleluyar." This remark will apply to more transactions than measuring onions.

EVIL thoughts are worse enemies than lions and tigers; for we can keep out of their way, but bad thoughts win their way everywhere. The cup that is full will hold no more: keep your head and heart full of good thoughts, that bad ones may find no room to enter.

[For the *Juvenile Instructor.*

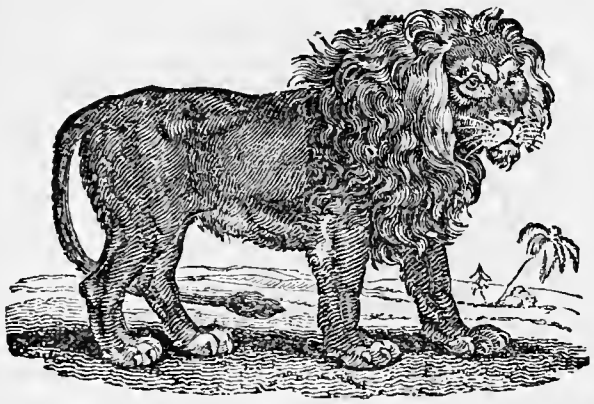
THE ANIMAL KINGDOM.

A LATE writer in giving a general idea of animals, says:

"Animals are living beings which feed upon plants,—or, in many cases, upon animals whose food is plants—and which have the sense of feeling and the power of motion."

The various kinds of animals are very numerous, from those so small that a thousand can sport in a drop of water, to the immense elephant, or huge whale; and their forms are as various as their sizes and kinds. But the name of animal is applied to all, whether they live on the earth, in the water, or amongst the clouds; or whether they walk, run, jump, crawl, swim or fly.

The different kinds of animals are divided into various classes or orders according to their shape, habits or other distinguishing mark or trait. Thus: those animals having "a backbone, containing a spinal cord, which is enlarged at the forward end into an organ called the brain," the backbone being made up of various parts called vertebræ, have been named *vertebrates.* To this grand division belong men, elephants, horses, oxen, camels, tigers, wolves' dogs, birds, turtles, lizards, snakes, frogs, whales, and most kinds of fishes; in fact, nearly everything we, in our common language, term animals.



Now, bees, butterflies, flies and all other insects; together with crabs, lobsters, shrimps and worms, belong to another division of animal life called *articulates*, which means jointed, from the fact of their bodies being formed of a number of rings or joints.

Then there are oysters, mussels, clams, snails, &c., which have neither a backbone nor a jointed body, but which have soft bodies, sometimes with a shell and sometimes without one. These are called *radiates*, from the fact of their parts radiating, or jutting out from a centre, like a star or flower; to this division belong the sea-urchins, sea-stars, jelly fishes and many others.

Now, these four grand divisions are again divided into orders, classes, families, &c.; but we will only refer to the vertebrates to-day, as they are apparently to us the most important portion of the animal creation.

The vertebrates are divided into mammals, birds, reptiles, batrachians and fishes.

The mammals are those animals that bring forth living young and nourish them with milk. They all breathe the air by means of lungs, and have warm blood, which is sent throughout the body by means of a heart, like that of man. Mankind, monkeys, cattle, beasts of prey, bats, rats, moles, opossums, sloths and whales belong to this portion of animal life.

Now the mammals are again divided into a number of orders known as man; monkeys or quadrumanes; flesh-eaters or carnivores; plant-eaters or herbivores; whales or cetaceans; bats or cheiropters; insect-eaters or insectivores; rodents or gnawers; edentates or toothless animals; marsupials or pouched animals; duckbills or monotremes.

Next to man, the most prominent class belonging to the mammals are the carnivores or flesh-eaters, most of whom are known as beasts of prey, from their living on the flesh of smaller or weaker animals, which they capture and devour. Their teeth and claws are very sharp. Their molars, or back teeth have sharp edges, and shut by each other like the blades of scissors, which enable them to cut the flesh they are eating into pieces fit for swallowing.

The principal tribes or families belonging to the flesh-eating animals are cats, hyenas, dogs, wolves, foxes, civets, bears, raccoons, seals and the walrus. Of which the cat tribe stands at the head, they having "the keenest senses and the quickest movements; they are also the most rapacious. Their tread is noiseless,—the bottoms of their feet being like a cushion, they stealthily approach their prey, and when near enough, seize it with a sudden spring." To this family belong our well known friend the common cat, the wild cat, jaguar, lynx, puma, leopard, panther and tiger.

Here we have the picture of a beautiful animal. It is a lion. Can you tell to which of these divisions, orders and families it belongs! Is it a vertebrate, an articulate, a mollusk or a radiate? It is a vertebrate, of course, because it has a brain and back bone, and a mammal because it has warm blood, lungs and a heart, and the female suckles her young. What next? Is it an insect-eater, gnawer or plant eater? It belongs to none of them; but to the carnivores or flesh-eaters, as it lives on the flesh of antelopes, oxen, deer and other animals which it captures and kills. Now of what family of the carnivores does it belong? To the cats, dogs, seals, bears or hyenas? To the cats; for the description we have given above of the animals of the cat tribe, exactly answers the description of the lion. Its senses are keen, its movements quick, and it is very rapacious. It noiselessly approaches its prey and with a sudden spring seizes it and carries it off.

Now you understand something about the way that naturalists have divided the animal creation so as to be better able to explain and distinguish the form, habits and traits of character of the birds, beasts and fishes created by God.

G. R.

A COLLEGE-PROFESSOR encouraged his geology-class to collect specimens, and one day they deposited a piece of brick, streaked and stained, with their collection, thinking to impose upon the doctor. Taking up the specimens, the professor remarked: "This is a piece of baryta from the Cheshire mines;" holding up another, "This is a piece of feldspar from the Portland quarries; and this," coming to the brick, "is a piece of impudence from some member of this class."

JUVENILE INSTRUCTOR

Is published in Salt Lake City, Utah Territory,

EVERY OTHER SATURDAY.

GEORGE Q. CANNON, EDITOR & PUBLISHER.

Single Copy, per Annum.....$3 00.
Single Copy, for Six Months..... 1 50.

☞ Grain brought to this City for the JUVENILE INSTRUCTOR will be received at the office of our paper—DESERET NEWS BUILDINGS.